Meeting Minutes Transmittal/Approval
Unit Manager's Meeting: Remedial Action and Waste Disposal Unit/Source Operable Unit
Washington State Department of Ecology, Room 5, Kennewick, Washington
June 6, 1996

FROM/APPROVAL: _____ Date 7/9/96
Bryan Foley, 200 Area Unit Manager, RL (H0-12)

APPROVAL: _____ Date 7/9/96
Jack Donnelly, 200 Area Unit Managers Ecology (B5-18)

APPROVAL: _____ Date 7/9/96
Paul Beaver, 200 Area Aggregate Area Unit Managers, EPA (B5-01)

Meeting Minutes are attached. Minutes are comprised of the following:

	(Pages)		
Attachment #1	1	-	Agenda
Attachment #2	44	-	Meeting Summary and Handouts
Attachment #3	1	-	200 Areas Strategy Meeting Grid
Attachment #4	6	-	200 Areas Source Operable Unit Strategy Action Item List
Attachment #5	2	-	200 Areas Source Operable Unit Strategy Parking Lot Items
Attachment #6	7	-	June 4, 1996, Priority Subteam Meeting Notes

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Prepared by: _____ Date 7/8/96
Greg B. Mitchem, ERC (H0-17)

Concurrence by: _____ Date 7/8/96
Vern Dronen/Greg B. Mitchem, BHI Remedial Action and Waste Disposal Project (H0-17)

Agenda - 200 AreasStrategy Workshop
June 6, 1996, 8:00 - 4:30 p.m.
Ecology Offices

Attachment 1

1. Introduction
   - What's New
   - Review Agenda
   - Business; Minutes Sign off, Time Constraints, Planned Interruptions

2. Review Action Item List and Parking Lot List

3. Strategy Document
   - Review Comments/Feedback
   - Next Steps (Revisions, Reissue, Schedule, etc.)

4. Brainstorm In Progress Review Briefing Minutes

5. Results of Prioritization Subteam Work

6. Parking Lot/Miscellaneous Items

7. Wrap-up
   - Next Meeting
   - Summarize Action Items

Attachment 2

Meeting Minutes 200 Area Strategy Group
June 6, 1996

1.0 INTRODUCTION

The meeting started at about 8:15 a.m. in the large conference room at the Washington State Department of Ecology's (Ecology) Kennewick office.

1.1 WHAT'S NEW

- Laura Russell discussed a meeting between a tribal representative and Ecology on the burial of waste generated from off site and buried in the 200 Areas. A concern was raised at the meeting about the accuracy of past and present waste designation. The 200 Areas Strategy teamwork was also briefly discussed at the meeting, and the tribal representative asked about how to participate.

- Paul Beaver stated, with agreement from Bryan Foley and Jack Donnelly, that tribal participation will be through review of the draft Strategy Document.

- Jack Donnelly reviewed an Inter-Agency Management Integration Team (IAMIT) meeting discussion by the U.S. Environmental Protection Agency (EPA) about the Strategy Document and the need for it to contain a schedule showing, as a minimum, how to meet the *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) enforceable milestones between now and 2008.

- Bryan Foley stressed the need to bring comments and requests regarding the Strategy Document to the team as a whole to consider and provide a unified response to upper management; Paul Beaver and Jack Donnelly agreed.

1.2 REVIEW AGENDA

The agenda was rearranged to allow Paul Beaver to leave at 1:30 p.m. and still participate in all topics, except review of RMT presentation and Strategy Document comments from Ecology. Paul Beaver had no comments on the Strategy Document.

1.3 MEETING MINUTES REVIEW/SIGN-OFF

- May 8, 1996, meeting minutes were signed by Bryan Foley, Jack Donnelly, and Paul Beaver.

- May 15, 1996, meeting minutes were reviewed by the team and redlined based on comments. The May 15, 1996, minutes will be revised for sign-off at the next meeting.

Review Action Items List and Parking Lot List

The action item list was reviewed. The handouts in Attachment 2 were distributed to support closeout of specific action items.

The action item list was updated based on the results of the review. It was agreed that action items related to the Technical Document would be marked "Hold," and noted that they would be addressed by the Technical Document, if appropriate.

- Paul Beaver requested the technical document development team to evaluate the three high-level waste streams--first cycle supernatant, cascade, and scavenged--in the Technical Document to determine if these waste streams can be treated as part of the same analogous group.

- The team discussed whether the Strategy and Technical Documents were primary or secondary documents and the level of review. It was agreed that the Strategy Document is a primary document that would be reviewed by the public. The decision on the Technical Document was based on its importance in selecting the basis for the field assessment work. The Technical Document is, therefore, more like a work plan than a supporting document and would be a primary document available to the public but without public review.
- The priority subteam proposed that the Technical Document subteam propose the structure of the document, and the representative site evaluation and selection criteria; the team agreed.

- Parking lot items were reviewed and updated. Bryan Foley requested a paragraph in the Strategy Document cover letter to address possible reasons to reevaluate the strategy. One reason may be the results of the Sitewide Cumulative Impact Assessment.

2.0 RESULTS OF SUBTEAM WORK ON PRIORITY

Jack Donnelly presented the results of the subteam on "Priorities." The attached priority subteam meeting notes for June 4, 1996, were distributed.

The finalized characterization priorities ranking table (Attachment 6) was presented. The rationale for deleting criterion four (Sites subject to known driving forces) was presented. Its duplication of criterion three (more mobile constituents versus less mobile constituents) was acknowledged. It was agreed to delete criterion four and clarify criterion three by adding that mobility included physical and chemical factors. Criterion nine was clarified by adding

reference to the RARA program as the primary agent to address short-term risks at surface sites. In response to a question from the team, it was stated that the table supports numerical ranking of sites using these criteria. It was stressed that the ranking was relative and that "low" does not mean unimportant.

The remediation ranking criteria was discussed next. The remediation criteria began as 15 criteria, which were consolidated to 9. The subteam did not feel ranking criteria by high-med-low was applicable to remediation criteria. The criteria were grouped as primary and secondary with clarifying text, as shown in the meeting notes. The primary criteria were predominantly considered in establishing priorities with secondary criteria used to make finer distinctions between sites when required. The criteria were discussed by the team. A separate criterion, based on geography and maximum data, was proposed. It was rejected by the team and not included. After minor editing, the criteria were then agreed to by the team.

Bryan Foley presented an overall priority statement to serve as a basis for the development of the strategy (Attachment 2). It was agreed to send a message stating that the strategy is not designed to slip milestones. The team recommended that the statement be expanded to include remediation and the actual Tri-Party Agreement milestone language. It should be included in the strategy introduction and executive summary. The group agreed on the basic structure for the statement, as discussed. The revised statement will be incorporated in the revision of the Strategy Document.

3.0 WHERE DO WE GO FROM HERE DISCUSSION

Greg Mitchem discussed the "pro's and con's" of this strategy versus the present way of doing business. A table that compared the documents produced between now and 2008, under both the strategy and Tri-Party Agreement, was presented and discussed by the team (Attachment 2). The need to develop cost comparisons was discussed. Greg presented a rough number of $100 million (the new way) versus $150 million using the Tri-Party Agreement. The table shows the potential to start remediation in the 200 Areas by 2003. It was acknowledged that the current priority for 100 and 300 Areas remediation does not provide funding for remediation in the 200 Areas until the other areas are completed. Jack Donnelly stated that if the team agrees on the best technical approach, it should be presented and not be changed by present funding levels. Jack requested more details and a better cost estimate for the next meeting. Bryan Foley stated that the Multi-Year Work Plan (MYWP) would be developed based on the team discussions.

The draft Strategy Document schedule was distributed and discussed. It was recommended that public review period be added after issuing Rev. 0. The schedule for in-progress briefings was also discussed. It was suggested that EPA and Ecology hold separate management briefings before the IAMIT meeting to help communicate the strategy and our current position. The team agreed on the following schedule:

- Results Management Team (RMT) Briefing June 11, 1996
- Ecology Management Briefing June 26, 1996
- EPA Management Briefing (TBD)
- IAMIT Briefing July 23, 1996 (Schedule and Costs required for this briefing)
- Hanford Advisory Board (HAB) ER Subcommittee August 8, 1996.

The document comment incorporation schedule should be revised to support the planned presentations. The team saw the challenge was "To keep momentum going by funding the best technical recommendations."

It was agreed that the next team meeting should include discussion of any external comments on the Strategy Document, review of a refined strategy cost and schedule, and review of the scope of the Technical Document. Paul Beaver left the meeting at this point due to a previous commitment.

4.0 REVIEW OF THE RMT IN-PROGRESS BRIEFING

Bryan Foley presented a draft of the RMT presentation for discussion (Attachment 2). The team reviewed the presentation and provided feedback. The RMT briefing is scheduled for June 11, 1996.

5.0 STRATEGY DOCUMENT

Comments from Ecology on the draft Strategy Document were reviewed (Attachment 2). It was agreed that Curt Wittreich and Laura Russell will coordinate incorporation of comments into the report within the next 2 weeks.

6.0 WRAP-UP

Next Meeting

The next meeting is scheduled for June 14, 1996, at Ecology. A meeting of the subteam on the Technical Document will be held to discuss the scope of the document and agree to representative site selection criteria.

Where Do We Go from Here

The following steps were proposed.

- The Strategy Document would be finalized and issued by September 30, 1996.
- During the review of the draft Strategy Document, each agency would seek management agreement.
- As part of the buy-in process, a presentation would be jointly prepared for presentation to the IAMIT and HAB.
- Want project schedule in Strategy Document. The schedule should be based on sound planning by the group, based on the strategy and not bound to the Tri-Party Agreement integrated schedule. Any proposed changes to the Tri-Party Agreement should be based on progress. For example, the Draft A work plans for the 200 West Area and 200 East Area should be submitted by December 1998.
- Want the strategy to explain the process (i.e., the relationships among the Technical Document, the work plan, and the DOWs).
- Want everyone to be clear on the role of the Strategy Document as a planning document to be used to coordinate with other programs, not set strategy for other programs.

TOUR ACTION ITEM NO. 6

1. What waste streams are currently being discharged to 216-B-3C Lobe (the only active disposal unit) of the 200-BP-11 OU.

Document WHC-SD-W252-ER-001, Rev. O, "Phase II Liquid Effluent Treatment and Disposal/W-252/A2081," discusses this subject in detail, including engineering measures to ensure the disposal site is not contaminated. There are three Engineering Change Notices (ECNs) against the document which are a result of changes in disposal practices. I am obtaining a copy of the document and ECNs which I will be happy to provide to you. Below are the waste streams currently going to the C Lobe.

241-A Tank Farm Cooling Water
242-A Evaporator Cooling Water
242-A Evaporator Steam Condensate
284-E Powerplant Wastewater
244-AR Vault Cooling Water
B Plant Cooling Water

Note that all these waste streams are scheduled to be routed to the TEDF around December 1996.

2. Why are there rad signs around 216-B-3B and -3C Lobes?

The rad signs around 216-B-3B Lobe are due to radioactive surface contamination detected about five years ago. The rad signs around 216-B-3C Lobe are due to the past potential for rad contamination.
There is no surface contamination currently located at the C Lobe.

CHARACTERIZATION ACTION ITEMS

1. **How is first cycle supernatant related to high level waste definitions?**

A literature search has not revealed definitions of specific minimum radionuclide concentrations or waste stream characteristics dating from the time of BiPO4 operations that qualify a stream as high, medium or low level material. Evolution of low, medium, and high level definitions have probably changed with each new process. {Changes in these definitions at the site along with the evolution of exposure standards may be worth investigating.} Generally, the concerns related to worker exposure from gamma fission products, contamination from plutonium itself, and possibly the non-radiological properties/hazards of the materials are the probable bases for the definitions.

The four major process waste streams generated from the BiPO4 separations process are coating waste, metal waste, first cycle decontamination waste and second cycle decontamination waste (ref. HW-10475C). All were considered to be high level wastes. Coating waste resulted from the dissolution of the aluminum jackets wrapped around the plutonium-enriched uranium slugs and was regarded to contain small but unknown quantities of radionuclides. Metal waste came from the acid dissolution of the uranium slugs after its separation from Pu-rich BiPO4. The metal waste had virtually all of the uranium (in the form of uranyl nitrate hexahydrate-UNH), 90% of the fission products and about 2% of the plutonium. The first cycle waste came from repeated acid dissolutions and reprecipitations of the Pu in BiPO4. The resulting waste contained trace quantities of UNH, about 10% of the original fission product and about 1% of the original Pu. The second decontamination cycle was similar to the first, producing a waste stream that contained less than 0.1% of the original fission product and 1% of the original Pu concentration.

The Pu-rich precipitate was then sent to the 224 concentration facilities for further separations. The process waste streams generated from repeated dissolution and precipitation of the Pu-rich compounds carried another 2% of the Pu off. This waste was commonly regarded as medium level waste and was usually combined with wastes from the processing cell drains in the 221 buildings and injected into the ground. Initially, the 216-B-5 and T-3 reverse wells were discharge sites but the waste was later discharged to cribs adjacent to the early tank farms. Low level wastes from these processes were cooling water, steam condensate, and chemical sewer wastes and were sent to the 216-B-3 and T-4 ponds.

The four waste streams emerged from the processing cells as acidic solutions and were neutralized with soda ash. They were then sent to the existing 530,000 gallon tanks in the 241-B, -C, -T and -U tank farms where the material was allowed to cascade through a three-tank system. Typically, the coating waste stream and first cycle decon waste streams were combined into one stream. Mention of first cycle wastes hereafter will imply the presence of the coating waste as well.

Once full, the cascade was taken off line and was allowed to reach an ambient condition based upon the amount of fission products in the waste stream. By cascading the waste insoluble compounds were allowed to precipitate out. The wastes "aged" in the tanks and changed characteristics over time due in no small part to the heating from the fission products. Most of the precipitate ended up filling about 70% the first tank of the cascade, filling about 1/3 of the second tank and filling in about 1/25 of the last tank. This material was generally reported to occur as either a soft slurry or as a harder material. The remaining liquid, the supernatant, contained the soluble fraction of the waste.

Historic references to the concentrations of uranium, fission products, plutonium and inorganic/organic components in both the precipitate and the supernatant of the waste streams have not been located. Except as described below, sampling programs and published results are known but have not been located. However, the concentration of fission products, uranium and plutonium can be deduced from the data provided in Maxfield about what was sent to the various cribs, ditches and trenches that received the supernatant wastes.

Samples of first cycle supernatant were taken from selected tanks in the 241-B, -C, -T, and -TX farms in 1950 (HW-20195) and found to contain the following average concentrations:

Pu = 8.2×10^6 pCi/L,
Gross Beta = 2.15×10^8 pCi/L,
Gross Gamma = 7.6×10^7 pCi/L,
Sr = 5.7×10^6 pCi/L, and
Cs = 1.48×10^8 pCi/L.

No information about the organic or inorganic constituents was given.

From Maxfield, backcalculating concentrations can be made based on the reported volume of supernatant discharged and the reported curie content for the radionuclides. An evaluation was made of the curie contents in the 216-B-35, 36, 38, 39, 40 and 41 cribs and the 216-T-14, 15, 16, 21, 22, 23 and 24 cribs, all of which received first cycle supernatant wastes in 1953-1954. The data show that the gross beta values of the supernatant sent to these cribs generally exceeded those reported in HW-20195. The 90Sr concentrations exceeded the reported values by up to 1000X and the 137Cs concentrations were up to 10X greater than found in 1951. Pu concentrations were also at or slightly greater than presented above.

From the above, it can be calculated that the metal waste likely contained an order of magnitude more radionuclides (90% vs 10% original fission product concentration) and the second cycle waste stream contained at least two orders of magnitude less radionuclides than the first cycle decontamination waste (10% vs 0.1% original fission product concentration).

There are two ways of looking at this data. When the supernatant waste was discharged to the ground it's radionuclide concentration may have dropped below the established concentrations required to be high level waste, with much of the fission products residing in the precipitate. The supernatant may have been classifiable as a medium-level waste. Or, the concentrations for defining high level waste was still below the reported values and an exception for soil column discharge was made to expedite increasing tank space.

Ultimately, it appears that a large quantity of the available supernatant from both first and second cycle decontamination wastes was sent to the ground. In addition, a large quantity of the supernatant from tanked wastes from the Uranium Recovery program were sent to the ground as well.

2. **Where did the muck removed from 361 tanks go?** The following information was taken from, "Engineering Study of 50 Miscellaneous Inaction Underground Storage Tanks", WHC-SD-EN-ES-040.

- 241-B-361 - has no liquids left in it, but does contain 20,678 gallons of sludge that was sampled and characterized in 1979 and 1984. It indicates the liquids were discharged to the 216-B-5 Reverse Well. It does not mention any pumping of liquids.

- 241-T-361 - has no liquids left in it, but does contain 28,000 gallons of sludge that was sampled and characterized in 1977 and 1985. It indicates the liquids were discharged to the 216-T-3 Reverse Well and the 216-T-6 crib. Later waste was rerouted to the "T" Tank Farm through a diversion box. It does not mention any pumping of liquids.

- 241-U-361 - has 98 gallons liquids left in it, and contains 27,734 gallons of sludge that was sampled and characterized in 1976 and 1985. It indicates the liquids were discharged to the 216-U-1 and 2 cribs. It was pumped down to the remaining 98 gallons in 1985. I assume the pumped liquid was sent to a tank farm, because other tanks mentioned in this report indicate their waste went to "tank farms".

- 241-Z-361 - has 200 gallons liquids left in it, and contains 20.000 gallons of sludge that was sampled and characterized in 1979. It indicates the liquids were discharged to the 216-Z-1 and 2 cribs and tile field. It was pumped down to the remaining 200 gallons in 1975. The report does not say where the waste was pumped to, but I assume the pumped liquid was sent to a tank farm, because other tanks mentioned in this report indicate their waste went to "tank farms".

3. **216-A-39 Crib**

This crib is within the Tank Farm fence boundary. North of AX Tank Farm is the AZ Tank Farm. It is actually on an AZ Farm drawing (what are you saying?? which farm is it in.)

4. **216-A-43 or 216-A-44.**

The ESD database does not have a 216-A-43 or 216-A-44 listed. It is possible those numbers were skipped in the numbering process.

5. **200 East Powerhouse Pond.**

The 200 East Powerhouse Pond is actually a ditch that connects to the underground pipeline that empties into the 216-B-3C Lobe.

The water is not treated. However, it has been characterized. It is (was) sampled for radionuclides, pH, grease, oil and TLCP (Total Leachable Contaminant Potential).

The 200 East Powerhouse Pond receives effluent from the 284E Powerhouse, 283 E Filter Plant, 282 E Raw Water Reservoir.

ATTACHMENT FOR CLOSURE OF GENERAL ACTION ITEM NO. 20

DOE Use of the CERCLA Municipal Landfill Presumptive Remedy

INTRODUCTION

The presumptive remedy program established by the U.S. Environmental Protection Agency (EPA) provides guidance to decisionmakers regarding appropriate response actions protective of human health and the environment for certain types of waste sites commonly encountered. Once the need for action is determined, identification of a preferred response action early in the process allows for streamlined data collection focused on the verification and design of the presumptive remedy. Additionally, other aspects of the decision making are accelerated (e.g. remedy selection and evaluation). Overall, the use of presumptive remedies accelerates the site cleanup process, ensures protection of human health and the environment, and maintains efficient and consistent decision making.

CERCLA MUNICIPAL LANDFILL PRESUMPTIVE REMEDY

EPA has developed a presumptive remedy for addressing threats posed by CERCLA municipal landfills (*Presumptive Remedy for CERCLA Municipal Landfill Sites, EPA 540-F-93-035*). The presumptive remedy documentation establishes containment (e.g. capping) as the preferred alternative. This preference is based on review of existing decisions across the nation for similar types of sites and is due primarily to the fact that landfills contain large volumes of heterogenous waste, rendering excavation and treatment impracticable (e.g. higher short term risks from exhumation and handling of waste). The guidance recommends that any data collection at landfill sites be focused on the design of an appropriate containment response action rather than the characterization of landfill contents. Data collection typically associated with the use of presumptive remedies is outlined in "*Presumptive Remedies: CERCLA Landfill Caps RI/FS Data Collection Guide*" (EPA/540/F-95/009).

The presumptive remedy is intended to be applied to any CERCLA landfill which has site characteristics (e.g. waste site type, disposal practice, impacted media) consistent with those described in the guidance (e.g. municipal landfills). Specifically, the containment remedy is meant to address large volumes of heterogenous waste exhibiting a low long term threat. The nature and extent of the waste should be impracticable to excavate and treat. Excavation and treatment is also deemed unnecessary to address the human health and environmental threats posed by the types of waste present. The presumptive remedy applies only to the source material (e.g. landfill contents) and any associated gases and/or leachate. It is expected that off-source impacts, such as contaminated groundwater not contained in the source area would be addressed by a separate response action.

DOE SITE APPLICATIONS

The characteristics of DOE landfills are similar to the characteristics which warrant containment for CERCLA municipal landfills. The DOE landfills include large volumes of heterogenous waste including construction/demolition debris, process hardware, laboratory equipment, etc. Contaminant types include radionuclides and metals, generally of lower migration potential than typical contaminants in municipal landfills (e.g. VOCs, organic wastes which lead to generation of landfill gas).

When determining to use the presumptive remedy at DOE sites, the waste types at the DOE landfills must be evaluated for consistency with the guidance. It is important to note, however, that waste types do not have to be identical. Key considerations are heterogeneity, volume, and potential threats posed by the waste. If all of these considerations support using containment, then the presumptive remedy should be used.

Additionally, precedence of using the presumptive remedy at DOE sites has been established at Brookhaven National Laboratory. At the Brookhaven facility, the presumptive remedy was used at a landfill which contained low level radionuclides and other DOE wastes. The waste types (e.g. laboratory waste and debris, decontaminated equipment, animal wastes, PPE clothing and devices, construction/demolition debris) were deemed compatible with the containment alternative.

TECHNICAL CONSIDERATIONS

The following is a discussion of the technical considerations important when evaluating the applicability of the EPA presumptive remedy to DOE sites. These considerations should be discussed with the decision makers in order to ensure them that the use of the presumptive remedies is based on sound technical judgement.

Develop conceptual model

In order to establish a need for action, and define the threats posed by waste at a DOE landfill, the site conceptual model must first be developed. Characteristics to define include:

- Disposal practice (e.g. trenches, pits, caisson)
- Waste types (e.g. reactor hardware, PPE, construction debris, lead bricks)
- Exposure pathways (e.g. migration to groundwater, external radiation, direct contact, surface water runoff)
- Receptors (e.g. site workers, ecological, offsite residents)
- Impacted media (e.g. subsurface soils, groundwater, surface water, air)
- Expected range of land uses (e.g. industrial, waste management, recreational, residential)

Define site problem

Once the conceptual model has been developed by the decision making team, the threats posed by the site (site problem(s)) can be defined. The site problem(s) should be defined specifically as possible, identifying the contaminant(s), pathway(s), and receptor(s) which indicate that a problem exists. For instance, the site problem may be defined as; "the primary threat posed by the solid waste burial ground is the potential for an inadvertent intruder become exposed to irradiated process equipment". This site problem warrants action which eliminates the potential for inadvertent exposure to contaminants.

Evaluate Compatability With Presumptive Remedy

The EPA presumptive remedy documentation describes municipal landfills as containing municipal waste codisposed with industrial and or hazardous wastes. These waste types are consistent with those expected in the DOE landfills. The presumptive remedy (containment) has been deemed appropriate for large volumes of heterogenous waste which exhibit a low long term threat (e.g. no immediate short term impacts to receptors). Presence of high hazard material (e.g. highly mobile, highly toxic) may be treated as a hot spot by excavation and or treatment if the material is known (from disposal records or site history) to be in a retrievable form in a discrete location. Otherwise the containment response action should be designed to address the toxicity and/or mobility of high hazard waste.

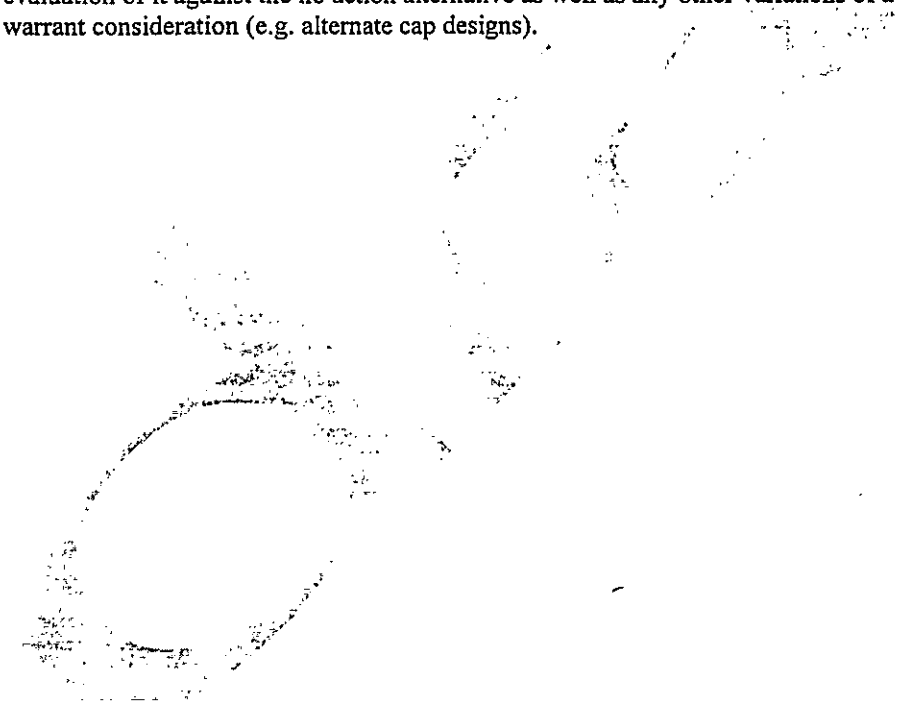
If the threats posed by the waste types present (e.g. site problems) are addressed by a containment response (e.g. control of exposure pathways) and the containment response is consistent with land use planning, the DOE landfill would be compatible with the presumptive remedy for CERCLA municipal landfills.

Documentation

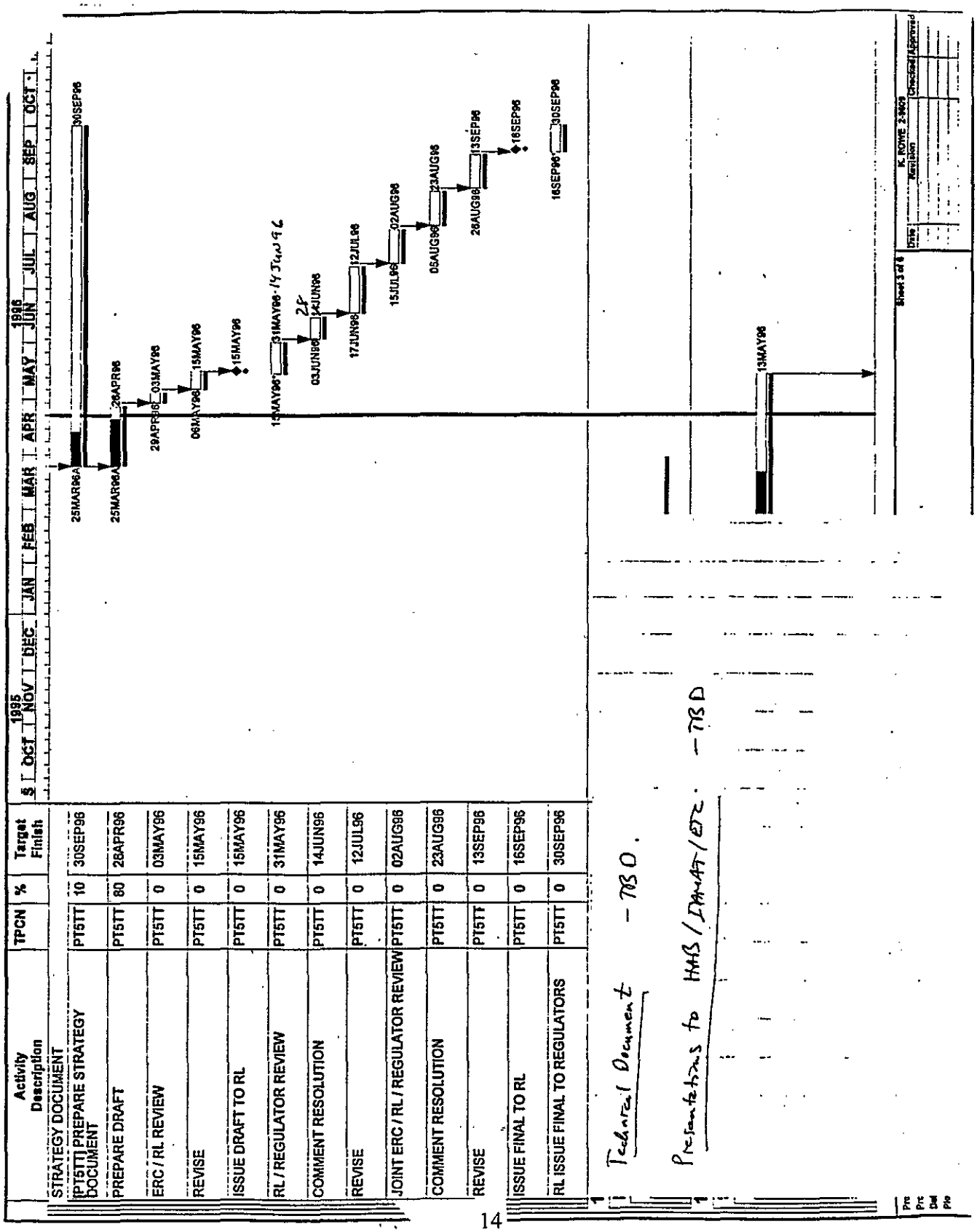
The decision to use the EPA presumptive remedy will be documented in the site-specific administrative record. With the compatability evaluation complete, the national administrative record will be relied upon for the justification of containment as an appropriate response for landfill sites. Depending on the preference of the decision making team, a bridging document may or may not be developed.

Bridging to EPA presumptive remedies can be accomplished by defining the site specific deviations from the presumptive remedy and documenting the deviations such that the requirements of the administrative record are met. For example, a fact sheet is being prepared by EPA to provide guidance on applying the EPA's municipal landfill presumptive remedy to military landfills at Department of Defense sites.. Specifically, it identifies how military landfills differ from municipal landfills and what impacts these differences have on the use of the EPA presumptive remedy. The "bridge" is the documentation created to support the decision that military landfills are adequately similar to municipal landfills and identifies the recommended modifications necessary to allow the use of the presumptive remedy. Similar to the effort being undertaken by DoD to bridge to the EPA presumptive remedy, DOE is exploring opportunities to apply the containment remedy to the landfills at its facilities (e.g. solid waste burial grounds, material disposal areas, sanitary landfills). Use of EPA presumptive remedies at the DOE field sites is explained in more detail in the fact sheet, "*DOE Use of EPA's Presumptive Remedies*".

In the case of the Brookhaven site, the presumptive remedy was applied directly. The bridging documentation may be warranted to provide an increased level of detail documenting the justification for using the presumptive remedy. The bridging document would contain the results of the evaluation of technical considerations discussed above. Finally a feasibility study document would be prepared, documenting the use of the presumptive remedy and the evaluation of it against the no action alternative as well as any other variations of a containment response that may warrant consideration (e.g. alternate cap designs).



ATTACHMENT FOR CLOSURE OF GENERAL ACTION ITEM
NOs. 19 & 25



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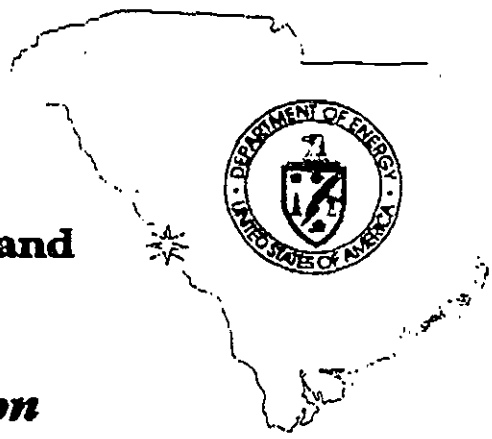

U. S. DEPARTMENT OF ENERGY
SAVANNAH RIVER OPERATIONS OFFICE

Office of Environmental Restoration and Solid Waste (OERSW)

Environmental Restoration Division

FACSIMILE COVER SHEET

Please deliver to: Kevin
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Phone: _____

Sent by: Bert Crapse
Fax: (803) 725-7548
Phone: (803) 725- 9866

Date: 5-14-96

# of sheets: 12 **(including this cover)**

Message(s): Info on ASCAD

#1139
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On December 21, 1989, SRS was included on the National Priorities List. In accordance with Section 120 of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the US Department of Energy (DOE) negotiated a Federal Facility Agreement (FFA) with EPA and SCDHEC to coordinate cleanup activities conducted at SRS. The FFA integrates RCRA and CERCLA and expands the site investigation process at SRS under the RCRA permit to address releases at or from units not included in the RCRA permit, and releases of hazardous or radioactive substances or both not regulated by the RCRA permit.

The FFA integrates the CERCLA response obligations with the corrective measures required by the RCRA permit. The CERCLA/RCRA integration includes combining assessments, investigations, and procedures for selection of response action(s) with procedures to modify the RCRA permit and the documents common to RCRA and CERCLA.

Under the current FFA, many of the individual source SWMUs were designated as separate operable units. Each of these operable units is slated to undergo comprehensive remedial investigation/feasibility study (RI/FS), selection of remedy, and remedial design. Many of the individual source operable units have nearly identical waste disposal histories since these activities were conducted concurrently at many locations across the site. For example, SRS had conducted similar operations at its five reactor areas: C, K, L, P, and R-Reactor Areas.

II. ASCAD PROCESS

The ASCAD process groups similar waste sites and develops a streamlined approach to site investigation, technology selection, remedial decision, and remedial design. The ASCAD strategy selects a lead waste site within the waste site group and conducts a comprehensive site investigation, technology evaluation, remedial selection, and remedial design. The remaining waste sites in the group (secondary sites) follow the lead site in the overall schedule and have a more focused and limited site investigation, remedial alternative selection, and remedial design. Figure 1 provides a comparison of the current RI/FS and ASCAD process generic timelines along with identification of key aspects of both the RI/FS and streamlined ASCAD processes.

The secondary sites use a limited site investigation approach in which the data quality objectives are more focused and are used to verify similarities to the lead waste site. The technology evaluation used for the lead site is applied to secondary sites and a generic remedy for the lead site is selected in a limited remedial alternative selection/decision. The remedial design for secondary sites is modified from the lead site based on site-specific conditions at the secondary sites. Administratively, significant savings in the process of document preparation can be realized through the combination of the RI report, baseline risk assessment (BRA), FS, proposed plan (PP), and record of decision (ROD). In general, implementation of the ASCAD approach becomes a standardized process with substantial time and cost savings for secondary sites. Figure 2 provides an estimated cost comparison of the generic RI/FS and ASCAD processes.

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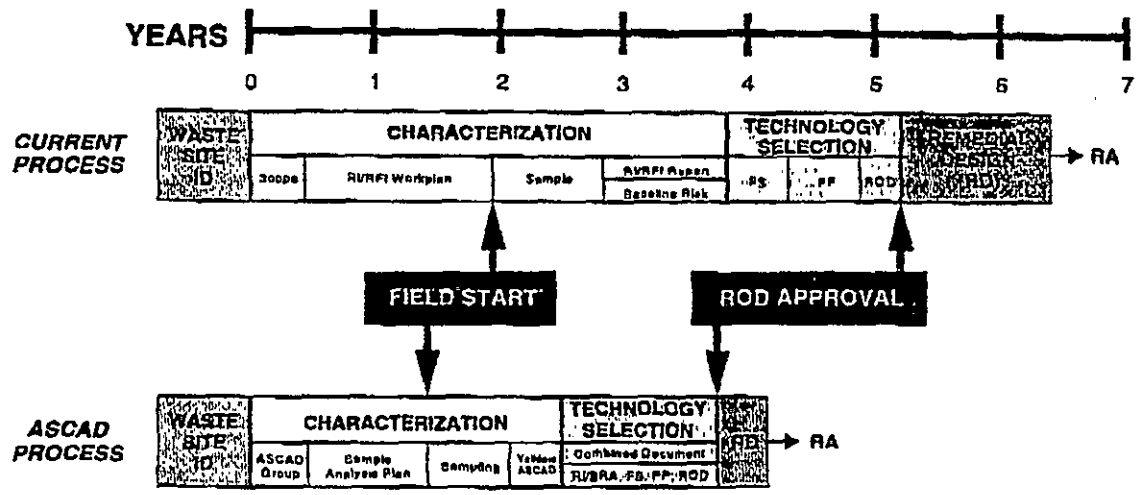
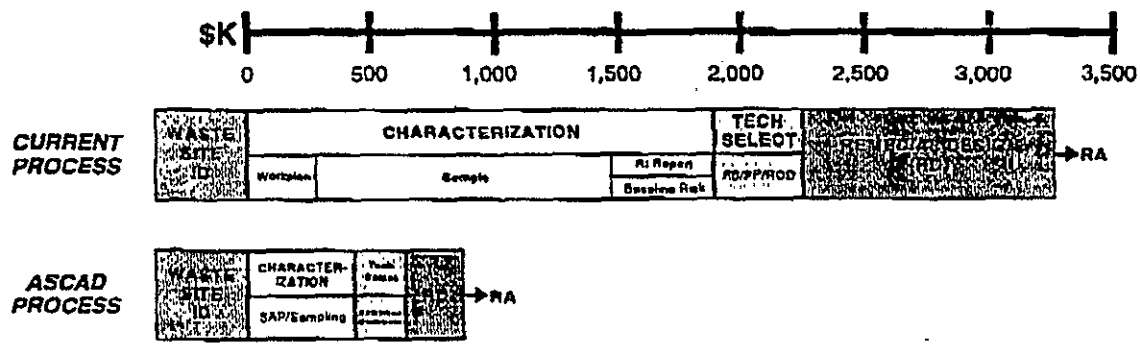
Figure 1
Current RI/FS & ASCAD Process Generic Timelines



Waste site groupings are based on similarities such as waste site category, contaminant type, media type, and common generic remedies. Waste site categories focus on the manner in which waste was disposed of in the environment (*i.e.*, seepage basins, lagoons, landfills, pits, and process sewer/waste lines). Media similarities refer to the environmental media that have been impacted and their physical and geochemical characteristics.

Figure 2
Current RI/FS & ASCAD Process Generic Costs



One of the key characterization objectives for the secondary sites is to determine if differences in the environmental setting are significant enough to warrant a change in the remedy or design applied to the lead site. Common generic remedies identify technologies and remedies that have been proven and are commonly used. Examples include capping landfills, and dewatering and

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The existing plan for remediation strategy development at the BPOPs centered on development of characterization work plans, sampling in the field, and subsequent regulatory documentation for the RI summary, BRA, FS, PP, and RODs, adhering to the standard RI/FS process identified in EPA guidance documentation. The current RI/FS strategy provides for development of all the above documents for each specific site.

Costs associated with the current RI/FS strategy from characterization through remedial design are estimated at $7,600,000. Approved RODs for all four sites were scheduled to be completed by calendar year 2001. Remedial action initiation would not commence at any of the four sites, however, until calendar year 2002. This RI/FS strategy results in a cumulative investigation and document development duration (field start to remedial action start) of over 20 years.

Applying the streamlined ASCAD process, which focuses on elimination of redundant documentation and characterization/remediation strategy development based on data provided from similar sites, provides for a decrease in the volume of regulatory documentation. Costs associated with the ASCAD strategy, from characterization through remedial design, are estimated at $4,200,000. Approved RODs for all four sites using ASCAD have an estimated completion date early in calendar year 1999. Remedial action at all four sites is expected to begin late in calendar year 1999. The ASCAD strategy results in a cumulative investigation and document development duration (field start to remedial action start) of only 13 years. Figure 3 provides a cost comparison of the current RI/FS process with the streamlined ASCAD process, as applied to the BPOPs.

Application of ASCAD is expected to result in a total cost savings of 45 percent and schedule reduction of 35 percent for all the BPOPs. Figure 4 provides a timeline comparison of the current RI/FS process to the streamlined ASCAD process as applied to the BPOPs identifying key milestones such as characterization field start, approved ROD, and remedial action start.

The ASCAD approach was scoped jointly between EPA Region IV, SCDHEC, and DOE-Savannah River (SR) and a proposed path forward provided for adherence with the existing field start milestone for the R-BPOPs. There was also an understanding that accomplishment of this field start and application of ASCAD to the characterization strategy would require expedited preparation of the revised work plan, regulatory review, revision, and approval. This proposal would eliminate the need to delay field work and would ensure that lessons learned from the pilot implementation of ASCAD could be expanded as quickly as possible into the SRS ER Program at all applicable waste groups.

V. SITE CHARACTERIZATION STREAMLINING BASED ON ASCAD

The R-Reactor Area BPOPs work plan was submitted to EPA and SCDHEC in January 1995, presenting a site characterization approach similar to the approach used at the K-Reactor Area BPOP, without the ASCAD strategy considered. This work plan is currently being revised,

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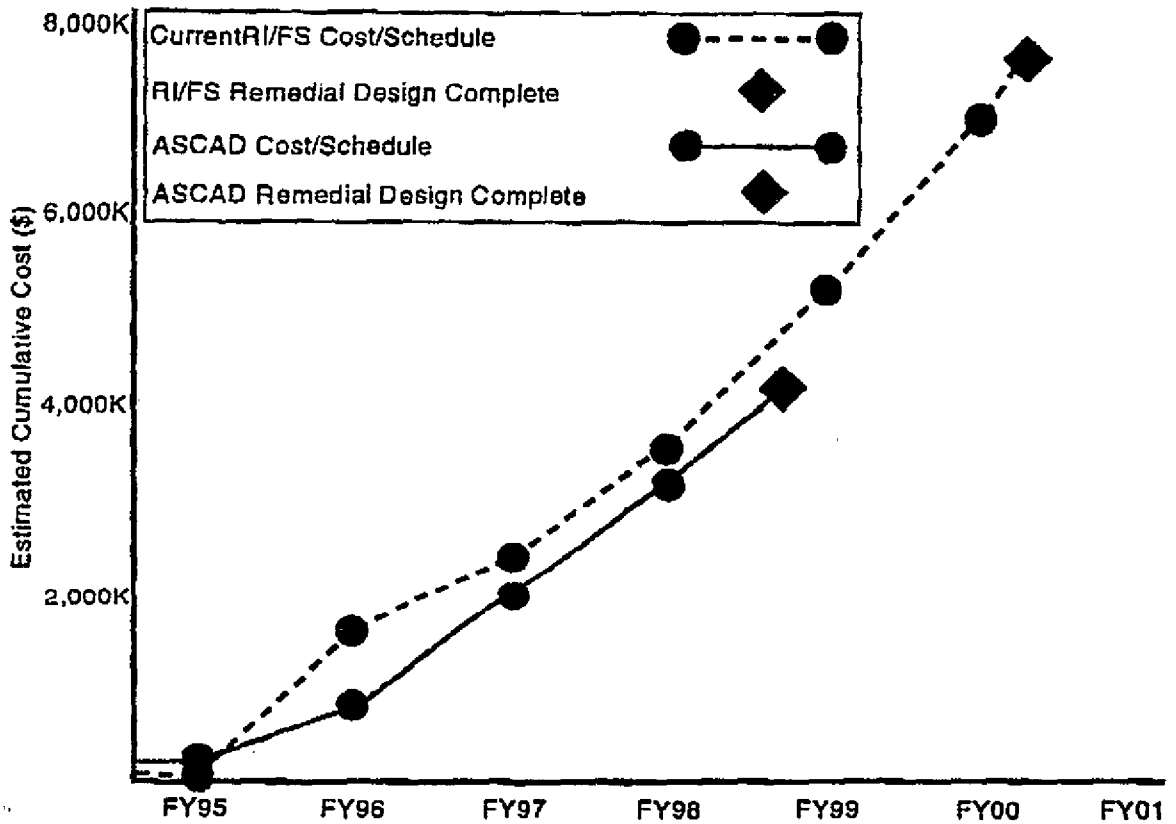
considering the results of the K-Reactor Area BPOP sampling in the context of the ASCAD strategy. This section will describe the differences in the revised work plan, as influenced by the ASCAD strategy.

Figure 3
Potential Cost & Schedule Savings for the BPOPs: RI/FS Through Remedial Design



The R-Reactor Area BPOPs unit consists of three known pits that are approximately 13 feet deep, 20 to 40 feet wide, and range in length from 300 to 450 feet. They are located side by side and separated by about 50 feet. Ground penetrating radar (GPR) and magnetometer surveys indicate the presence of a fourth pit containing metallic material located between two of the pits. In addition, GPR indicated the presence of two disturbed soil areas, although no metallic signature was found.

Based on the historical records describing the type and activity of the debris disposed of in the pits, the three known pits will be treated as a single unit. The K-Reactor Area BPOP soil sampling results indicated that only very low activities of radionuclides, very low concentrations of metals, and a trace of a few organics were found above background levels. Trace levels of

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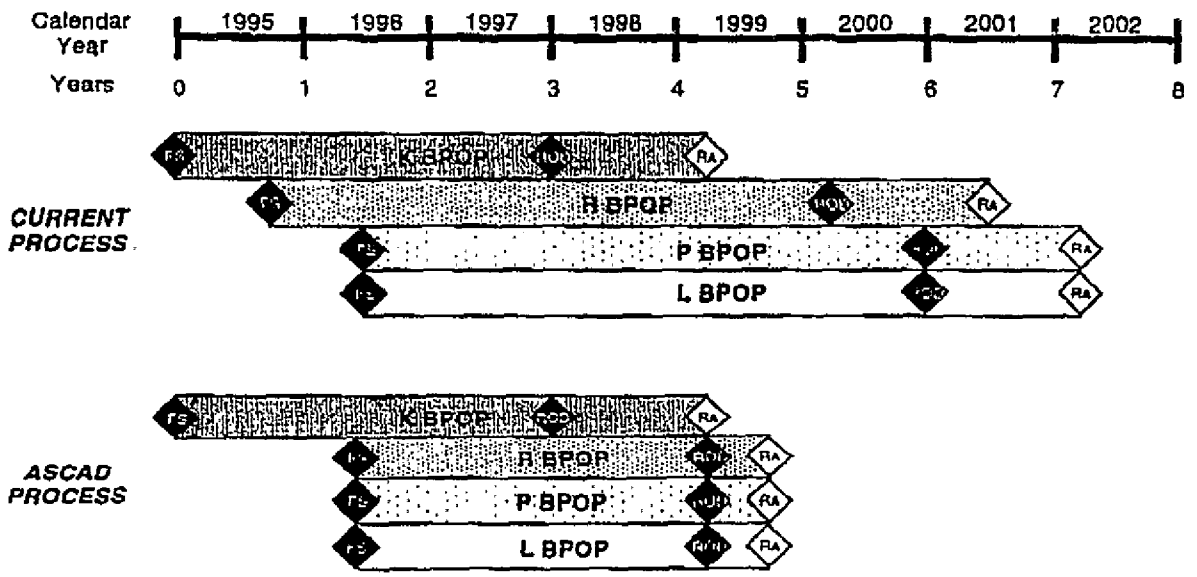
chloroform detected in an earlier soil-gas survey was also present in groundwater at less than 1 microgram per liter. Metals and radionuclide results from groundwater are currently inconclusive, and may have been affected by elevated turbidity since they were collected from temporary piezometers installed without a filter pack. The vertical soils sampling strategy at the K-Reactor Area BPOP was driven by gross alpha and non-volatile beta radioactive screening. Samples were collected at sequentially deeper intervals until two consecutive samples were screened at levels that did not exceed background.

Figure 4
Current RI/FS vs. ASCAD Process BPOPs Timelines



FS-Field Start
ROD-Approved Record of Decision
RA-Remedial Action Start

Since the data from the investigation of the K-Reactor Area BPOP indicated that little to no significant migration of contaminants had occurred, the R-Reactor Area BPOPs work plan was revised to collect data to confirm this hypothesis, collect additional information on the activity levels associated with the buried debris, determine whether low levels of tetrachloroethylene are also present in groundwater, and determine the nature of the unknown trench and disturbed areas. A key assumption to be tested was that the fourth trench contains the same type of debris as the other three trenches, since different waste types were typically taken to other disposal areas. Table 1 compares the current RI/FS and the ASCAD characterization strategies for the R-Reactor Area BPOPs.

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The approach to establish background was modified to incorporate the K-Reactor Area BPOP data, since the soil type in the K and R-Reactor Areas is the same. Thus, a single background boring will be used to establish whether R-Reactor Area gross alpha and non-volatile beta levels fall within K-Reactor Area ranges.

The original R-Reactor Area BPOPs work plan called for the use of a cone penetrometer (CPT) to provide data on the lithology and the elevation of the water table, correlating the data to a nearby well cluster. Ten locations were planned with a target depth of about 170 feet (the depth of the local confining unit). Since the R-Reactor Area BPOPs will now be treated as a single unit, the number of CPT locations was reduced to five. In addition, the target depth for four of the five CPT points will be about 20 feet below the water table (about 55 feet below ground surface). Since migration from the K-Reactor Area BPOP is minimal, information on the deeper portions of the aquifer is not likely to be needed. The number of locations where geotechnical data will be collected will also be reduced, focusing on the unknown trench and the disturbed soil areas, which may exhibit different physical properties than the known pits. Total organic carbon analysis will also be added in the unknown pit should organic contaminants be encountered.

Table 1
Characterization Sampling Strategy Revisions Based On ASCAD

Data Needs	R-BPOP Work Plan	Revised R-BPOP Work Plan ASCAD Approach	Rationale
Background Soil Sampling	3 borings, 5 intervals each	1 boring, 4 intervals each	Use K-BPOP background data since soil type is the same
Lithologic Water Table Data	10 CPT locations ~170 feet deep to green clay	5 CPT locations, 1 to 170 feet other 4 to ~20 feet below water table (~55 feet deep)	Data needed to define groundwater flow, impacts to groundwater limited based on K-BPOP.
Geotechnical Sampling	6 borings	4 borings (1 in unknown pit)	K-BPOP geotechnical data should be applicable for known pits
Soil Sampling	19 borings, 8 outside pit boundaries, 2 consecutive ND before terminating	11 borings, 3 outside pit boundaries, 1 ND before terminating key on unknown pit, downhole logging for rads	K-BPOP data showed minimal migration to soils, better source characterization
Groundwater	12 temporary piezometers	5 permanent piezometers	Treating individual pits as single unit, better quality inorganic data needed.
Analytes	TAL TCL Radionuclides	Metals Radionuclides VOAs	No organics of significance found in K-BPOP, except for VOAs; SVOCs to be added if visual observation of unknown pit indicates need

CPT - Cone Penetrometer
ND - Non Detects
TAL - Target Analyte List (Metals, Cyanide)
SVOC - Semi-Volatile Organic Compounds
TCL - Target Compound List (Volatile and SVOCs, PCB, and Pesticides)
VOA - Volatile Organic Analysis

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The soils characterization strategy has been changed to reduce the total number of boreholes from 19 to 11. The focus of the data collection efforts in the revised work plan will be the unknown pit and the disturbed soil areas, since they represent potential significant differences from the known pits.
One borehole in each of the three known pits will be advanced and logged for radionuclides. These data can then be compared to the expected radionuclide inventory. The unknown pit will have three boreholes advanced including radionuclide logging and volatile organic screening. The expected condition of the unknown pit is that it is identical to the known pits, based on historical waste segregation practices. If significantly higher levels of radionuclide activity or organic contamination is found, a more detailed characterization approach, including trenching, may be required to determine whether the differences between the unknown pit and the known pits would warrant an expanded remedial alternatives evaluation and a different generic remedy. A similar strategy will be applied to the disturbed soil areas. The termination of vertical sampling will now be based on one screening non-detect, since the K-Reactor Area BPOP data indicated that the screening data was never refuted by the fixed laboratory analysis and that contaminant migration was minimal.

The number of groundwater sampling locations based on the CPT investigation is being reduced from 12 in the original work plan to 5 in the ASCAD revised plan. The reduction is based on treating the pits and disturbed soils as a single unit. Permanent piezometers (monitoring wells) will be installed so that more representative groundwater samples can be collected and more than one round of data can be collected to verify the analytical results.

Finally, the analyte list for soils and groundwater is reduced to metals and radionuclides based on the lack of organic contamination found at the K-Reactor Area BPOP. Volatile organic compounds (specifically tetrachloroethylene and trichloroethylene) will also be analyzed for in groundwater since these compounds were detected at low concentrations in the soil-gas survey conducted at the site. This is consistent with the results from the K-Reactor Area BPOP, where chloroform was detected in both soil-gas and groundwater.

VI. CONCLUSIONS

A significant reduction in the scope of characterization of the R-Reactor Area BPOPs is forecasted which will result in a significant cost and schedule reduction by investigation of the BPOPs as a group of waste sites based on site similarities. Similar savings are expected in the technology selection and remedial design phases. Additional cost and schedule savings should be realized upon application of the ASCAD process to the P & L-Reactor Areas BPOPs in fiscal year 1996.

Through application of ASCAD at groups of waste sites, ROD approvals and initiation of risk reduction in the field through remedial action starts will be expedited. Cost savings will enable

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more funds to be expended on actual risk reduction rather than development of redundant documentation and acquisition of superfluous data.

The ASCAD process provides extreme flexibility by allowing characterization and technology development at sites that do not fit within an established waste site group. This was evidenced by identification of additional data needs for the unknown pit at the R-Reactor Area BPOPs should it not fit within the boundaries identified for the BPOPs waste site group.

Integration of the ASCAD streamlining process into the SRS ER Program and across the DOE complex could result in a substantial increase in reduction of risk at DOE sites through allocation of funds toward implementation of remedial actions. Additionally, reduction in redundant documentation could alleviate obstacles in obtaining approvals to perform field activities by minimizing the volume of material requiring reviews.

ACKNOWLEDGMENTS

The authors of this paper would like to acknowledge those whom have provided programmatic and technical support in development and implementation of the revised characterization strategy for the BPOPs. Key participants are C. Y. Butler, J. N. Kirr, and A. D. McKirby of WSRC and J. Baum of DOE-SR.

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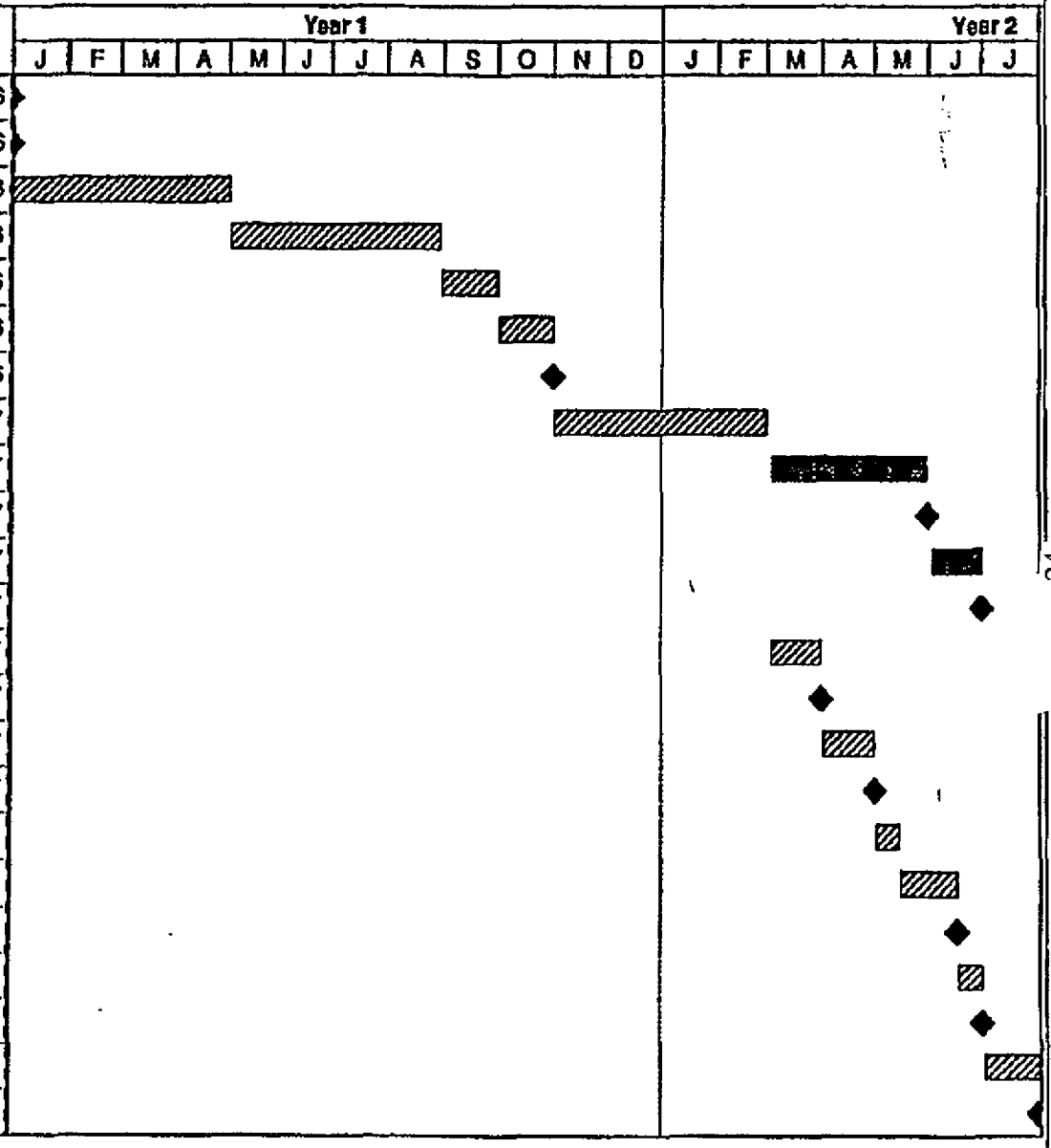
ASCAD GENERIC SCHEDULE

VALIDATED DATA TO APPROVED ROD

ID	Name	Start	Finish
1	Validated Data Complete	Jan 1 '96	Jan 1 '96
2	Initiate Combined Document (CD)	Jan 1 '96	Jan 1 '96
3	Develop CD (RI/BRA)	Jan 1 '96	Apr 30 '96
4	Develop CD (FS)	May 1 '96	Aug 29 '96
5	Develop CD (PP/ROD)	Aug 30 '96	Sep 30 '96
6	SRS Approval	Oct 1 '96	Oct 31 '96
7	Submit R0 CD to EPA/SCDHEC	Oct 31 '96	Oct 31 '96
8	EPA/SCDHEC Review R0 CD	Nov 1 '96	Feb 28 '97
9	SRS Revise CD	Mar 3 '97	May 30 '97
10	Submit R1 CD to EPA/SCDHEC	May 30 '97	May 30 '97
11	EPA/SCDHEC Approve CD	Jun 2 '97	Jun 30 '97
12	CD (RI/BRA/FS) Approved	Jun 30 '97	Jun 30 '97
13	SRS Revise PP	Mar 3 '97	Mar 31 '97
14	Submit R1 PP to EPA/SCDHEC	Mar 31 '97	Mar 31 '97
15	EPA/SCDHEC Approve PP	Apr 1 '97	Apr 30 '97
16	PP Approval	Apr 30 '97	Apr 30 '97
17	Public Notification	May 1 '97	May 14 '97
18	Public Comment Period	May 15 '97	Jun 16 '97
19	Public Comment Period Complete	Jun 16 '97	Jun 16 '97
20	SRS Revise ROD	Jun 17 '97	Jun 30 '97
21	Submit R1 ROD to EPA/SCDHEC	Jun 30 '97	Jun 30 '97
22	EPA/SCDHEC Approve ROD	Jul 1 '97	Jul 30 '97
23	ROD Approval	Jul 30 '97	Jul 30 '97



Project: ASCAD Generic 108/158
Date: 1/1/96

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

Attachment 2

DRAFT DOCUMENT SCHEDULED BASED ON IMPLEMENTATION OF THE 200 AREA STRATEGY

Description	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
200 STRATEGY SCHEDULE/CURRENT TPA SCHEDULE - NO. OF DOCUMENTS													
Technical Document	1/0												
Work Plans		1/1	1/4	0/2	1/2	0/3	0/3	0/3	0/3	0/8			
DOWs			2/4	3/3	3/3	3/3	3/3	3/3	3/3	2/4	2/4		
Characterizat'n		1/1	1/3	2/3	3/3	3/3	3/3	3/3	3/3	3/3	2/3	1/2	
LFI/QRA/RI		1/1		2/4	3/3	3/3	3/3	3/3	3/3	3/3	2/4	2/4	
FS Reports			1/1	1/3	2/4	3/3	3/3	3/3	3/3	3/3	3/3	2/3	1/2
Proposed Plans/RODs			1/1			1/1	0/0	1/1	0/0	1/1	0/0	0/0	1/1
Remedial Design							Start						
Remedial Action							Start						

table.new

DRAFT RMT PRESENTATION

AGENDA

- Point of View
- Status
- Background
  - Objectives
  - Vision
- 200 Strategy Document
  - Assumptions and Constraints
  - Waste Site Groupings
  - Implementation Process
  - Priorities
- Team Perspectives
- Accomplishments
- 200 Area Work Schedule
- Challenges
- Key Points to Remember
- What We Need From You

POINT OF VIEW

We believe that the strategy document is a means of getting to remediation faster and optimizing characterization activities.

- We have created an agile team that includes the Tri-Parties and have developed a strategy for 200 Area remediation projects using collective decision making techniques.
- We need to gain both DOE and regulator upper management committment to the strategy.
- We need to begin implementation of the strategy immediately to maximize cost savings and efficiencies and to get regulator/public support.

STATUS - 200 AREA REMEDIAL ACTION

- A working draft Strategy Document has been issued for review by the Strategy Team.
- The strategy team has established a process and necessary criteria to start implementation.
- Funding is available this year to start establishing waste site groupings.
- Upper management support for the strategy is needed to continue implementing the strategy in FY97 and out years
- The 200 Area Strategy Document will be issued Rev. 0 in FY96.

OBJECTIVES

- Define an integrated, streamlined process for proceeding with the Remedial Investigation/Feasibility Study/Record of Decision (RI/FS/ROD) and Remedial Field Investigation/Corrective Measures Study/Closure Plan (RFI/CMS/CP) activities.
- Incorporate lessons learned from 100 Area and 300 Area projects.
- Build efficiency into remaining characterization.
- Establish overall remediation priorities and identify near-term work to support the 200 Areas remediation.

VISION STATEMENT

The 200 Areas strategy is a streamlined process of getting to and performing cleanup that is technically sound, protective of human health and the environment, and publicly acceptable.

200 STRATEGY DOCUMENT

- Assumptions and Constraints
- Waste Site Groupings
- Implementation
- Priorities
- Schedule

ASSUMPTIONS AND CONSTRAINTS

Assumptions	
1.	Near term interim remedial measure focus is on worker protection and no spread of contamination and long-term risk reduction/remedial action, when appropriate.
2.	**A new way of grouping sites for characterization may be needed.** This grouping may or may not be the same for remediation.
3.	**Applicable presumptive remedies, analogous sites, and observational approach can be used, provided characterization (which includes, but is not limited to, historical data) information support it.**
4.	The **Hanford Past-Practice Strategy**, integrated with *Resource Conservation and Recovery Act of 1976* (RCRA) closure requirements, will provide **process steps to be used in this strategy.**
5.	Waste or contaminated media, including transuranic (TRU) constituents and pre-1970 TRU waste may be left in place as long as the risk associated with this in-place remediation is acceptable. Alternative technologies will continue to be assessed.
6.	U.S. Department of Energy (DOE) shall ensure that surveillance and maintenance is adequate for addressing surface contamination migration.
7.	**The Tri-Party Agreement and Long Range Plan schedule dates may need to be reconciled. It is assumed that this is possible and the strategy will be the basis for these changes.**
8.	200 Areas strategy will be developed within the intent of the Environmental Laws.
9.	Decay may be a viable remediation option for short-lived (half-life of approximately 30 years or less, Cs-137, Sr-90, Co-60) radionuclides.
10.	Integration with other projects/programs will occur.
Constraints	
1.	**Funding is a constraint to developing schedules, not strategy. The 100 and 300 Areas priority is recognized.**

200 AREAS SOURCE WASTE SITE GROUPS

200 AREAS IMPLEMENTATION PROCESS

No. of Documents		
Old		New
0	Technical Document	1
32	Work Plans	3
32	DOWs/Pre-ROD Field Characterization	24
32	LFI/RI	24
32	FS/Proposed Plans	<24
TBD	RODs	TBD

PRIORITIES

- Overall - The overall priorities that will drive the 200 Strategy implementation are meeting the "Pre-ROD characterization complete" TPA milestone of 12/31/2008 and the Permit Modification schedule of 2,000 for the three 200-BP-11 TSD's.

- Characterization - A set of 13 criteria have been developed that can be used to establish which sites will be characterized first. Criteria consider groundwater impact, contaminant mobility, level of historical data available, and ease of characterization.

- Remediation - Remedial actions will be prioritized based on sites with high risk, proximity to existing facilities, remediation that will show early progress, and remediation that will cleanup sites.

TEAM PERSPECTIVES

(Later)

ACCOMPLISHMENTS

- Agreement on representative site characterization.
- Agreement on RCRA/*Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) integration.
- Agreement on use of generic approaches (plug-in, presumptive remedy).
- Agreement on reducing number of work plans

CHALLENGES

- Meeting the "Pre-ROD characterization complete" TPA milestone of 12/31/2008 and the Permit Modification schedule of 2,000 for the three 200-BP-11 TSD's.
- Gain regulator and DOOE "up front" committment.
- Reducing Characterization Costs Further to Optimize Baseline
- Minimize Impact on 100/300 Cleanup
- Be Ready To Support ERDF Disposal Through Rates
- Be Ready To Support the Challenge 2003 Concept

KEY POINTS TO REMEMBER

- The strategy is a much improved approach to cleanup
- Number of documents have been reduced: 3 work plans vs. 32 work plans; 24 characterizations vs. 32 characterizations
- Relief from funding constraints will come by reducing deliverables, not by deferring the dates.

WHAT IS NEEDED FROM AUDIENCE

- Support for the 200 Strategy.
  - Regulator and DOE Upper Management
  - Funding in FY97
- Support for the Multi-Year Work Plan commitment.
- Commitment to support 200 Area Team's collective decision making

ECOLOGY COMMENTS ON 200 AREAS CLEANUP STRATEGY Attachment 2

1. Introduction: Change this section by removing 1.1 and 1.2 headers and provide a discussion that "tells a story" . It is Ecology's intent for this strategy document to accompany and support a change package to the TPA. Therefore, the introduction should be written to be very understandable and reader friendly. Other comments include:
   - Maximum of 2 pages in length
   - Discuss relationship with TPA and how we got where we are today
   - Discuss planned and unscheduled work and the need to do what we are doing
   - Introduction should describe site grouping
   - Need to link GW assessment with source units and not limit scope
   - Move vision statment forward in discussion
   - **Use references and bibliographies** This was intended as a general comment to add references and a bibliography to the document at the Section or Appendix level.
   - Support statment "lessons learned" and provide examples

2. Assumptions and Constraints: Generally felt this section was adequate with minor changes.
   - Reformat section so assumptions and constraints are bulleted as text (Remove table.)
   - Remove 3rd sentence.

3. Overall Approaches:
   - Consolidate the content of this section into the present Section 5 (which will be come 4 in the revision).

4. Waste Site Groupings: Based on previous comment, this section moves forward.
   - Remove lead in paragraph on AAMSR's and generally cover this info in introduction under how TPA approach was developed.
   - Move table 2 to Appendix A
   - Change discussion on analogous site to require confirmation sampling
   - Recognize that AAMSR's are not complete characterization but only preliminary work
   - **Remediation Groupings:** This section is not easily understood. Consider rewording section for ease of reading, this may include dropping indented portion; ensure indented language is consistent with agreed upon wording. Recognize that we don't know what the remediation groupings will be at this time. Will the Priorites taskgroup/subgroup create remediation grouping? If so, incorporate those groupings here.

5. Strategy Implementation: Provide a more balanced discussion with greater emphasis on Strategy for Assessment. This can best be accomplished by breaking section into the following two main subheadings:
   - Strategy for Assessment
   - Streamlined Approach for Remediation

The rest of this section was difficult to read. **Understand that several more iterations of this document, particulary this section, will likely be necessary.** Recommend the following general format and comments:

5.0 Strategy: Lead in paragraph describing flow chart. Flow chart to be modified slightly to show dividing line between Assessment and Remediation.

5.1 Strategy for Assessment: This section to have a subsection for each block in flowchart. Each subsection will specifically point out the requirements

5.1.1 Technical document: This section needs to be better defined. See characterization subgroup's latest minutes. Discuss representative site selection and characterization of RCRA TSD units when possible.

5.1.2 Work Plans: This section must describe that Conceptual Models will be refined using characterization field data not AAMSR. It must include what content will be in the WP and the process ~~and~~ of the WP. It must include RCRA TSD requirements and RCRA terminology.

5.1.3 DOW's: See comments above that may continue to be applicable especially RCRA TSD requirements

5.1.4 Characterization: create description

5.1.5 RI/RFI: create desciption

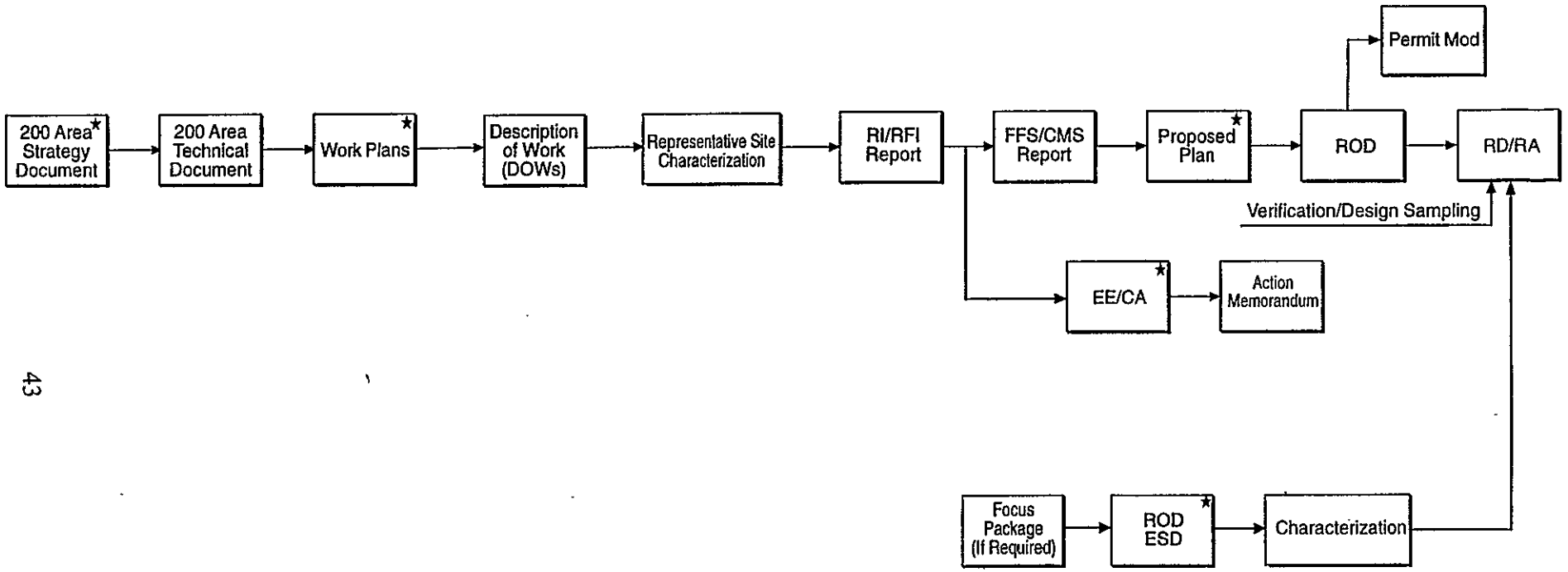
5.2 Streamlined Approach for Remediation: This section should recognize the possibility of this approach but not be committal. Follow the example of describing each block in the flow chart with its separate section. Maybe a format similar to below.

5.2.1 FFS; 5.2.2 EE/CA; 5.2.3 Action Memorandum; 5.2.4 Proposed Plan; 5.2.5 ROD; 5.2.6 RD/RA; 5.2.5 Verification / Design Sampling; 5.2.8 Focus Pakage/ROD ESD; 5.2.9 Characterization

6.0 Priorities: Retitle this section to "Criteria for Establishing Priorities" unless priority waste sites will be shown.
   - Use priority ranking and include as Appendix
   - incorporate priority subgroups discussion
   - use two subheadings in this section; one for characterization the other for remediation

ADD SECTIONS FOR SCHEDULE AND PROPOSED MILESTONES

200 Areas Implementation Flowchart.



★ - Public Involvement Opportunities

200 AREAS STRATEGY PRIORITY STATEMENT

The overall priorities that will drive the 200 Strategy implementation are meeting the "Pre-ROD characterization complete" Tri-Party Agreement milestone of 12/31/2008 and the Permit Modification schedule of 2000 for the three 200-BP-11 TSDs.

200 Areas Strategy Meeting Grid

Participants	3/20/96 (mtg)	3/21/96 (mtg)	3/22/96 (mtg)	4/4,5,8/96 (char. grouping)	4/9/96 (tour)	4/10/96 (mtg)	4/18/96	5/8/96 (mtg)	5/15/96 (mtg)	6/6/96
Bryan Foley	X	X	X	X	X	X	X	X	X	X
Paul Beaver	X	X	X	X	X	X	X	X	X	X
Dennis Faulk		X								
Joan Bartz	X	X	X			X	X	X	X	X
Suzanne Dahl	X	X	X	X	X	X	X	X	X	X
Jack Donnelly	X	X	X		X	X	X	X	X	X
Norm Hepner								X	X	X
Alisa Huckaby	X	X	X							
Moses Jaraysi	X	X	X							
Dave Lundstrom	X	X	X		X			X		X
Shri Mohan	X				X	X	X	X	X	X
Laura Russell	X	X			X	X		X	X	X
Joan Woolard	X	X	X		X	X	X	X		
Greg Mitchem	X	X	X		X	X	X	X	X	X
Greg Eidam	X	X	X		X	X				
Michael Galgoul	X	X	X		X	X	X	X	X	X

200 Areas Source Operable Unit Strategy Action Item List - (06/06/96)

No.	Performer	Description	Date Assigned	Due Date	Date Completed	Description of Closure
Tour Action Items						
1	ERC	Was there a Sr-90 release to Gable Mt Pond?	04/09/96	Hold	Hold	Items will be addressed as part of Technical Document Development, if approved (Note 1).
2	ERC	Was there an overflow from Gable Mt Pond to West Lake?	04/09/96	Hold	Hold	Note 1
3	ERC	What is the physical status of the Hexone Tanks and what monitoring is being done?	04/09/96	Hold	Hold	Note 1
4	ERC	What is the well control for contaminants from the B/C cribs, and what are the trends?	04/09/96	Hold	Hold	Note 1
5	ERC	Is there groundwater contamination associated with 200 N?	04/09/96	Hold	Hold	Note 1
6	ERC	What is currently going to B Pond, and why are there rad signs around B and C lobe?	04/09/96	05/17/96	Hold	Note 1
7	ERC	Why does a surface stabilized area exist SE of OU3 inside the fence?	04/09/96	05/17/96	Hold	Note 1
Tour Follow-on Work						
1	ERC	Is there 200 N groundwater contamination?	04/10/96	Hold	Hold	Note 1

1

200 Areas Source Operable Unit Strategy Action Item List - (06/06/96)

No.	Performer	Description	Date Assigned	Due Date	Date Completed	Description of Closure
2	ERC	Ditches versus trenches (and cribs; label open, closed, ????).	04/10/96	Hold	Hold	Note 1
3	ERC	Are any septic tile fields around Z Plant active?	04/10/96	04/10/96	04/10/96	Yes, there are active septic fields around Z-Plant.
4		Waste-site groupings need field review to see how they fit (reality check).	04/10/96	Hold	Hold	Incorporate as part of technical document or work plan work. Note 1
5	DOE	B/C controlled area "risk" with windy season coming up and other surface contamination issues in the 200 Areas.	04/10/96	TBD	Hold	Note 1
Characterization Action Items						
1	ERC	How is first cycle supernatant related to high-level waste definitions? **(ERC)**	04/08/96	05/08/96	06/06/96	
2	ERC	Where did the muck removed from 361 tanks go? **(ERC)**	04/08/96	05/08/96	06/06/96	
3	ERC	Is A-39 in the tank farm? **(ERC)**	04/08/96	05/08/96	06/06/96	
4	ERC	Where is A-43 and A-44? **(ERC)**	04/08/96	05/08/96	06/06/96	
5	ERC	Is there a new 200 E Powerhouse Pond? **(ERC)**	04/08/96	05/08/96	06/06/96	
6	ERC	Need additional inventory information from the miscellaneous waste group sites to subcategorize.	04/08/96	Hold	Hold	Hold pending technical document determination.

200 Areas Source Operable Unit Strategy Action Item List - (06/06/96)

No.	Performer	Description	Date Assigned	Due Date	Date Completed	Description of Closure
7	ERC	QA check on the waste-site type designations used in the grouping process (e.g., process condensate). Check with Stenner et al. (**ERC**)	04/08/96	Hold	Hold	Hold pending technical document determination.
8	Suzanne/Paul	Capture grouping philosophy - Narrative from subteam.	04/08/96	04/25/96	04/25/96	
General Action Items						
1	Tri-Parties	Public involvement before finalizing the 200 Areas Strategy will occur.	03/22/96	TBD	06/06/96	Strategy Document is a primary document with public review.
2	All	Any items in the workshop sourcebook that the team feels are a candidate for inclusion in the strategy should be highlighted for future consideration (have ready for field trip).	03/22/96	05/30/96	06/06/96	No items were identified.
3	All	Field trip, April 9, 1996 - RL to coordinate with Paul Beaver and Jack Donnelly. Anyone who can brief on a particular waste site/aggregate area will inform their agency's contact person. Bring lunch and sourcebook.	03/22/96	04/09/96	04/09/96	
4	All	Next meeting - April 10, 1996.	03/22/96	04/10/96	04/10/96	
5	Karl Fecht	Calculations for buffering capacity of soils (in liquid waste study).	03/21/96	03/22/96	03/22/96	Karl Fecht handed out material on 03/22/96.

200 Areas Source Operable Unit Strategy Action Item List - (06/06/96)

No.	Performer	Description	Date Assigned	Due Date	Date Completed	Description of Closure
6	All	Collect public values.	03/22/96	04/10/96	04/10/96	It was decided that public values would not be included in the Strategy Document.
7	All	Read AAMSR before field trip.	03/22/96	04/09/96	04/09/96	
8	ERC	Strategy document describe "linkage" of final grouping criteria statements.	03/22/96	05/17/96		To be addressed in strategy document. Still open.
9	ERC	Provide adequate explanation of flowchart in strategy document.	03/22/96	05/17/96		To be addressed in strategy document.
10	ERC	Prepare participants grid for all the meetings.	03/22/96	04/18/96	04/18/96	
11	ERC	Get the meeting minutes from this meeting out early.	03/22/96	04/01/96	04/01/96	
12	All	Each team member to review lists generated in Section 8.0 to come up with additional brainstorming ideas on implementation and prioritization. These should be sent to Joan Woolard before the meeting.	03/22/96	04/10/96	04/10/96	Brainstorming completed in 04/10/96 meeting.
13	ERC	Submit revised annotated outline before meeting.	03/22/96	04/03/96	04/03/96	Outline submitted and revised in 04/10/96 meeting.
14	All	Evaluate need for an analytical strategy. Separate document or included in strategy.	05/02/96	05/15/96	05/15/96	Part of level of characterization subteam. Analytical strategy as part of pre-work plan group.

200 Areas Source Operable Unit Strategy Action Item List - (06/06/96)

No.	Performer	Description	Date Assigned	Due Date	Date Completed	Description of Closure
15	ERC	Check to see what new information is available since the AAMSR (geophysical logging).	05/02/96	TBD	Hold	Note 1
16	ERC	Provide a copy of the analytical strategy.	05/02/96	05/08/96	05/08/96	
17	ERC	Pros/cons of work plan option 2 (strategy recommendation versus "old way").	05/02/96		06/06/96	Based on progress review.
18	ERC	Norm Hepner added to distribution list.	05/08/96	05/15/96	05/15/96	
19	ERC	Create project schedule showing work through 09/96.	05/08/96	05/22/96	06/06/96	Schedule handout.
20	ERC	Applicability of municipal landfill presumptive remedy to DOE burial grounds.	05/08/96	05/22/96	06/06/96	Closed with Kevin's handout.
21	ERC	Copy of phased response guidance.	05/08/96	05/15/96	05/15/96	
22	ERC/Ecology	Moses/Linda talk on RCRA issues.	05/08/96	05/15/96	06/06/96	Met on Tuesday 06/04/96.
23	ERC	Options evaluation factors should be reworded to capture meaning and use as a evaluation factor.	05/15/96	06/06/96	06/06/96	Technical editor added to cycle to insure meaning of statements is clear.
24	ERC	Is the Strategy Document a primary document or secondary document per the Tri-Party Agreement.	05/15/96		06/06/96	The Strategy Document is a primary document.
25	ERC	Project schedule for FY 1996.	05/15/96	06/04/96	06/06/96	Schedule handed out.

200 Areas Source Operable Unit Strategy Action Item List - (06/06/96)

No.	Performer	Description	Date Assigned	Due Date	Date Completed	Description of Closure
26	Ecology/EPA	Priority subgroup should look at criteria for selecting "representative" sites.	05/15/96	06/04/96	06/04/96	Priority subgroup looked at this during June 4, 1996, meeting and recommend it be handled by the Technical Document Subteam.
27	ERC	Explain what and where the "Focus Package" box on the 200 Areas Implementation Flow Chart can/may be used.	06/06/96	TBD		

200 Areas Source Operable Unit Strategy Parking Lot Items - (06/06/96)

No.	Description	Date Assigned	Date Closed	Status	Description of Closure
1	100 mrem/yr basis - April 10?	03/22/96		Linked with Item 3.	Try for next meeting after Item 3 discussion.
2	Presumptive remedies.	03/22/96	05/08/96		Consensus on integration with Strategy Document received.
3	Land use (industrial standard?) - April 10? • Does characterization drive land use or does land use drive characterization? • Does characterization drive remedial decisions or does remedial decision drive characterization?	03/22/96		Elevated to decision-makers.	Meeting held 05/09/96 with Dave Lundstrom, Paul Beaver, Bryan Foley, and Doug Sherwood. Proposed language for an assumption was discussed. Revised assumption will be provided to all participants for further consideration. Issue still open. Will be considered during Technical Document development.
4	Groundwater versus source correlations?	03/22/96	06/06/96		Prioritization issue. Hold pending priority discussion.
5	Consider waste site deletion candidates. (Do we know enough about some sites now to drop from further consideration?)	03/22/96	05/08/96		Waste site reclassification approach accepted.
6	Put remedial alternatives section in Strategy Document?	03/22/96	05/08/96		Outline addresses this approved.
7	Possible addition to assumptions list (from Suzanne Dahl). • Strategy actions must be considered against sitewide cumulative risk.	03/22/96	06/06/96	Closed	
8	Waste disposal for the 200 Areas? - April 10.	03/22/96			Included in Item 3 above.

1

Attachment 5

0342230

200 Areas Source Operable Unit Strategy Parking Lot Items - (06/06/96)

No.	Description	Date Assigned	Date Closed	Status	Description of Closure
9	Scope of the Technical Document. How much data evaluation is needed and what belongs in the technical document versus the work plans. Geophysical logs and groundwater data, conceptual models.	05/03/96	05/15/96		Assign to pre-subteam and present to full team. Description of closure level of characterization. Subteam established generic technical document scope and defer the level of detail to the technical document working team.
10	Interim versus final action.	05/03/96	05/08/96		Deleted.
11	Level of risk assessment and characterization.	05/03/96	06/06/96		Assign to subteam and present to full team.
12	Include schedule in Strategy Document.	05/13/96	06/06/96		Based on agreement that schedule is in Strategy Document.

Attachment 6

Agenda
200 Area Strategy Priorities Subteam
June 4, 1996, 8:00 - 4:30 p.m.
Bechtel Building (3350 GWW) Room 2B32

1. Prioritization
   - Characterization Criteria Team Feedback
   - Remedial Action Prioritization Brainstorm Ideas Evaluation
   - Overall Priorities

2. Representative Site Selection Criteria for Technical Document Work
   - Other Criteria/Needs to Kick Off Effort?

3. RCRA/CERCLA Integration

4. In-progress Reviews

5. Miscellaneous Items
   - Risk Assessment
   - Interim versus Final
   - Schedule
   - Other Programs

6 Wrap-up
   - Presentations to Full Teams
   - Follow-on Work
   - Next Meeting (if necessary)

JUNE 4, 1996, PRIORITY SUBTEAM MEETING NOTES

Remedial action prioritization criteria shall be grouped into primary and secondary criteria. The primary criteria shall be predominantly considered in establishing priorities, with the secondary criteria being reviewed as the priorities are being developed based on the primary criteria.

The primary criteria are as follows:

- Sites that have high risk/current spread of contamination shall be remediated first. (No sites have currently been identified in this category that is not already being addressed. If a site is identified in the future, then an evaluation of what appropriate action is needed will be performed. This evaluation will factor in the remaining remedial action prioritization criteria.)

- The proximity to other facilities/site infrastructure will establish remedial action priorities. (For those facilities that are being remediated, the waste sites near that facility should be included in the facility remediation. The waste sites that are near facilities/site infrastructure that will not be remediated in the near term will not be given a high priority. A waste site that is near existing facilities/infrastructure that, if remediated, could impact the existing facility operation would be given a low priority.)

- Waste site remediation that would show early progress would be a high priority.

- Focus on remove/stabilize remedial actions for the short term and capping for the long term. (This criteria does not impact or imply a preference of remove/stabilize over capping; however, when a remedial alternative of remove/stabilize is selected, these remedial actions are preferred to be performed first over those remedial actions that involve a cap to emphasize sites that have a "cleaning up" alternative over sites that involve leaving waste in-place. The sites that require a cap should also be dealt with collectively and grouped such that a single or fewer caps will be used to address multiple waste sites; remedial action selection for all waste sites is not anticipated to be completed before starting remedial action in the 200 Areas.)

The secondary remedial action prioritization criteria are as follows:

- Prioritize remedial actions that allow for coordination of worker skills. (Remedial actions that require certain worker skills, such as vitrification, should be grouped together to maximize the use of these worker skills in a logical manner.)

- Coordination with other programs is required. (Where a need arises due to other 200 Area programs to delay or expedite a remedial action, these considerations need to be included when establishing the priorities for waste site remediation).

- Where possible, waste sites shall be remediated starting from the areas outside or within the buffer zone and working inward toward the waste management areas.

- Sites that are considered easier to implement remedial actions shall be considered over sites that are more complex to remediate.

- Efficiency through remediation/consolidation of large geographic areas shall be considered in prioritizing waste site remediation. (Consolidation of material to minimize cap area, and prioritizing work so that all work in a specific geographic location is performed at one time should be considered.)

WASTE MANAGEMENT ACTIVITIES CURRENTLY IN THE 200 AREAS

The following are examples of currently existing activities associated with waste management missions in the 200 Areas:

- The Environmental Restoration Disposal Facility (ERDF) will become operational in FY 1996 (Record of Decision issued January 1995) and will continue to operate to handle remediation waste. In Section X (Selected Remedy) of the ROD, it states that "Finally, constructing the ERDF at the selected site is consistent with the Hanford Future Sites Uses Working Group recommendations to consolidate waste management activities on the Central Plateau."

- Environmental Impact Statement (EIS) for 100 Area Reactors also point to the 200 Areas as the final location for the 100 Area Reactors.

- Low-level waste burial grounds are currently permitted as a disposal facility in the 200 Areas.

- US Ecology is currently operating under a 99-year permit for disposal of commercial low-level waste.

- Naval Reactor Compartments Burial Ground is located in the 200 Areas and is the disposal location for the Department of Defense nuclear reactor compartments.

- Future Sites Uses Working Group report that identifies the 200 Areas mission as waste management.

- Comprehensive Land-Use Plan, predecisional draft, which also discussed the 200 Areas as waste management.

- Other currently permitted facilities associated with waste management, but not specifically disposal, are double-shell tanks, Central Waste Complex, WRAP, 616 Building, TEDF, 242A Evaporator and LERF/TEDF, T Plant, PUREX Storage Tunnels, and the 222S Laboratories.

Attachment 6

200 WASTE DISPOSAL - ERDF WASTE ACCEPTANCE CRITERIA

CERCLA Decision Document In Place

Waste Profiling

Acceptable Material to ERDF:

- CERCLA action
- No Free Liquids
- No explosive, gaseous, pyrophoric, etc.
- Liner Compatibility
- LDR Treated Wastes
- Concentration Limits

Attachment 6

remedial action prioritization

Outside In

Easiest First

High Risk (Unacceptable Current Risk)

Current Spreading of Contamination (Surface Contamination)

Proximity to Other Facilities

Interferences from Ongoing Activities and Site Infrastructure

Efficiency Through Remediation of Large geographic Area

Coordination of Worker Skills

Coordination With Other Programs

Early Action

In Parallel With Characterization

Early Actions That Show Progress

Remedy Based Prioritization

Focus on Remove/Stabilize First, Then Cap

Sites With Current Work Plans

CONSOLIDATION OF CHARACTERIZATION PRIORITIES FROM BRAINSTORMING		
	SPECIFIC CRITERIA	**CRITERIA RANKING**
	Impacts to groundwater (GW): past	Low
	Impact to groundwater (GW): present	Med
	Immediate future (5-10 years) of groundwater (GW) impacts	High
	More mobile constituents versus less mobile constituents (mobility should include both physical and chemical factors)	Med-High
	No or limited characterization information including historical data	Med
	Not a well understood chemistry promoting migration (increasing mobility) for group	Med-High
	Good candidate analogous sites (maximum number of sites addressed)	High
	Long vs short half-life (long first over short lived)	Low
	Current threat sites (surface threat) - assumes RARA program provides short-term actions to lower its priority.	Low
	Low-levels of expected contamination: large area to be remediated	Med
	Sites near perimeter of plateau vs core	Med
	Easier (vs more difficult) to characterize and/or remediate first	High
	Sites with contaminants that have identified potential treatability technologies associated with them	Med

Distribution
Unit Managers' Meeting: 200 Areas Remedial Action
200 Areas Remedial Action Strategy Work Shop
June 6, 1996

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Donna Wanek ..... DOE-RL (H0-12)

Dennis Faulk ..... EPA (B5-01)
Paul Beaver ..... EPA (B5-01)

Joan Bartz ..... (Ecology) B5-18

Vern Dronen ..... ERC (H0-17)
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